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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/519,869	12/21/2005	Adele Charmaine Shaw	9052-211	9299
20792 7590 02/27/2009 MYERS BIGEL, SIBLEY & SAJOVEC PO BOX 37428 RALEIGH, NC 27627				
EXAMINER				
FIORITO, JAMES				
ART UNIT		PAPER NUMBER		
1793				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/519,869

Applicant(s)

SHAW, ADELE CHARMAINE

Examiner

JAMES A. FIORITO

Art Unit

1793

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 December 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SE/US)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Specification

Claim 17 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 16 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The limitation "without reprocessing of the nuclear material" is new matter.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 15 and 18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claims 15 and 18 recites the broad recitation fuel element, and claim 14 recites uranium metal fuel elements, Magnox fuel elements, and/or fuel element debris which is the narrower statement of the range/limitation.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 4-6, 8, and 13-18 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Kirkham US 4582637.

Kirkham teaches solid fixation of the radioactive-reprocessed product of Magnox fuel from the first generation of British nuclear power stations uranium metal fuel encapsulated in magnesium alloy cans (Column 1, Lines 25-30). The radioactive-reprocessed product is fixated in cement matrices (Column 1, Lines 48-51).

Claims 3, 7, and 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kirkham US 4582637 in view of Noakes US 4416810.

Kirkham does not expressly state that the cementitious material is Portland Cement.

Noakes teaches a radioactive material cement fixation process, wherein the cementitious material comprises Portland Cement (Column 1, Lines 41-50).

At the time of invention it would have been obvious to a person of ordinary skill in the art to perform the method of Kirkham including the use of Portland Cement as the cementitious material in view of the teaching of Noakes. The suggestion or motivation for doing so would have to fixate the radioactive material in a matrix that has good

compressive strength, leach, and heat resistance so that it can be transported in the solid state and stored at suitable radioactive solid storage sites (Column 1, Lines 44-49).

Kirkham does not expressly state that the nuclear material is placed in a container.

Noakes teaches that radioactive cement fixation mixtures may be cast into 55-gallon drums or other appropriate size containers (Column 8 Lines 3-11). The mixtures are cured in the containers up to 60 days.

At the time of invention it would have been obvious to a person of ordinary skill in the art to form the process of Kirkham including radioactive cement fixation mixtures may be cast into 55-gallon drums or other appropriate size containers and the mixtures are cured in the containers up to 60 days in view of the process of Noakes. The suggestion or motivation for doing so would have been to reduce the possibility of inadvertent mishaps (Column 8 Lines 9-11).

With respect to claims 10-12, it is well settled that determination of optimum values of cause effective variables such as these process parameters is within the skill of one practicing in the art. *In re Boesch*, 205 USPQ 215 (CCPA 1980).

Claims 1, 4-6, 8, and 13-18 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Hess US 5946639.

Hess teaches that magnesium swarf generated from mechanically stripping-off Magnox fuel cladding from British gas cooled reactor fuel (Column 2 Lines 20-24). The swarf contains uranium and furnace slag (Column 2 Lines 24-26).

Claims 3, 7, and 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hess US 5946639 in view of Noakes US 4416810.

Hess does not expressly state that the encapsulating material is Portland Cement.

Noakes teaches a radioactive material cement fixation process, wherein the cementitious material comprises Portland Cement (Column 1, Lines 41-50).

At the time of invention it would have been obvious to a person of ordinary skill in the art to perform the method of Hess including the use of Portland Cement as the cementitious material in view of the teaching of Noakes. The suggestion or motivation for doing so would have to fixate the radioactive material in a matrix that has good compressive strength, leach, and heat resistance so that it can be transported in the solid state and stored at suitable radioactive solid storage sites (Column 1, Lines 44-49).

Hess does not expressly state that the nuclear material is placed in a container.

Noakes teaches that radioactive cement fixation mixtures may be cast into 55-gallon drums or other appropriate size containers (Column 8 Lines 3-11). The mixtures are cured in the containers up to 60 days.

At the time of invention it would have been obvious to a person of ordinary skill in the art to form the process of Hess including radioactive cement fixation mixtures may be cast into 55-gallon drums or other appropriate size containers and the mixtures are cured in the containers up to 60 days in view of the process of Noakes. The suggestion or motivation for doing so would have been to reduce the possibility of inadvertent mishaps (Column 8 Lines 9-11).

With respect to claims 10-12, it is well settled that determination of optimum values of cause effective variables such as these process parameters is within the skill of one practicing in the art. *In re Boesch*, 205 USPQ 215 (CCPA 1980).

Response to Arguments

Applicant's arguments filed 12/12/08 have been fully considered but they are not persuasive.

Applicant argues that the prior art does not teach or suggest the nuclear material comprises uranium metal fuel elements, Magnox fuel elements, and/or fuel element debris.

With respect to Applicant's arguments over Kirkham, the intermediate level floc encapsulated by the process would comprise at least some uranium metal fuel elements, Magnox fuel elements, and/or fuel element debris according to the broadest reasonable interpretation of the term element (See Column 1 Lines 7-12 and Column 1 Lines 25-30).

Even if Kikham did not inherently comprise some uranium metal fuel elements, Magnox fuel elements, and/or fuel element debris, it would have been obvious to one of

ordinary skill in the art to confine the irradiated nuclear fuel without reprocessing, since at the time of invention the confinement of the Magnox fuel without reprocessing would have been a predictable result within the understanding of one of ordinary skill in the art, *KSR*.

With respect to Applicant's arguments over Hess, the swarf encapsulated by the process would comprise at least some uranium metal fuel elements, Magnox fuel elements, and/or fuel element debris according to the broadest reasonable interpretation of the term element (Column 2 Lines 20-25 and Column 6 Lines 43-46).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James A. Fiorito whose telephone number is (571)272-7426. The examiner can normally be reached on 9am - 6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on (571) 272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/James A Fiorito/
Examiner, Art Unit 1793

/Wayne Langel/
Primary Examiner, Art Unit 1793